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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,788	10/31/2003	David R. Hembree	99-0812.3	1707
22823	7590	08/11/2004	EXAMINER	
STEPHEN A GRATTON THE LAW OFFICE OF STEVE GRATTON 2764 SOUTH BRAUN WAY LAKEWOOD, CO 80228			MENZ, DOUGLAS M	
			ART UNIT	PAPER NUMBER
			2824	

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/698,788

Applicant(s)

HEMBREE ET AL.

Examiner

Douglas M Menz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 47-67 is/are pending in the application.
- 4a) Of the above claim(s) 53-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 47-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/27/04</u> . | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of Species I, claims 47-52, in the reply filed on 5/27/04 is acknowledged. The traversal is on the ground(s) that there is no supporting analysis relating the species election to the claims. This is not found persuasive because Species II and III are both drawn to structures which include second openings and a plurality of test contacts in the second openings.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 47-52 are rejected under 35 U.S.C. 102(e) as being anticipated by Elenius et al. (US 6287893).

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Regarding claim 47, Elenius discloses a semiconductor component comprising:

A semiconductor die (10) having a face and a plurality of die contacts (18) on the face in a pattern (Figs. 1-2 and Col. 6, lines: 2-30);

An electrically insulating layer (22) on the face (Fig. 2 and Col. 6, lines: 25-35);

A plurality of redistribution conductors (30) on the layer in electrical communication with the die contacts (18) configured to redistribute the pattern of the die contacts (Figs. 1-2 and Col. 7, lines: 5-50);

An electrically insulating outer layer (33) on the conductors and the layer having a plurality of openings aligned with selected portions of the conductors configured in an area array (Figs. 1-2 and Col. 7, lines: 49-60); and

A plurality of bumped contacts (28) in the openings bonded to the selected portions of the conductors (Figs. 1-2 and Col. 7, line 60 – Col. 8, line 28).

Regarding claim 48, Elenius further discloses wherein the bumped contacts comprise solder balls (28) and the area array comprises a grid array (Figs. 1-2 and Col. 7, lines: 60-65).

Regarding claim 49, Elenius further discloses a plurality of under bump metallization layers (26) on the selected portions configured to facilitate bonding of the bumped contacts to the redistribution conductors (Fig. 2 and Col. 7).

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Regarding claim 50, Elenius further discloses wherein the die is contained on a semiconductor wafer (Col. 6, lines: 2-15).

Regarding claims 51-52, Elenius further discloses that the described redistribution process is for relocating the solder bumps anywhere on the surface of the device (Fig. 1 and Col. 7, lines: 35-48).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following US patents all disclose various semiconductor chip redistribution conductor configurations 5892179, 5849606, 6011314, 3387365, 5547740, 5736456, 5829128 and 6097087.

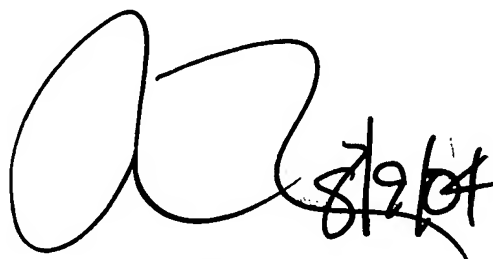
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas M Menz whose telephone number is 571-272-1877. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DM

A handwritten signature in black ink, consisting of a large, stylized 'R' followed by 'ELMS' and a date '8/19/04'.

RICHARD ELMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800